

Name: _____ Date: _____ Period: _____

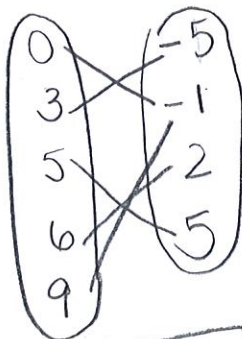
ANSWER

Unit 6 Practice Test

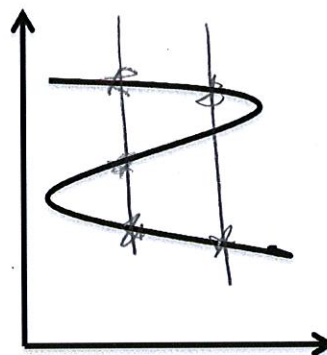
KEY

Determine whether each relation is a function. Explain, or show, why or why not in one sentence.

$(9, -1)$ $(5, 5)$ $(6, 2)$ $(0, -1)$ $(3, -5)$



yes



no

Find the range from the given domain $\{-3, 0, 1, 4\}$.

$$f(x) = -4x - 6$$

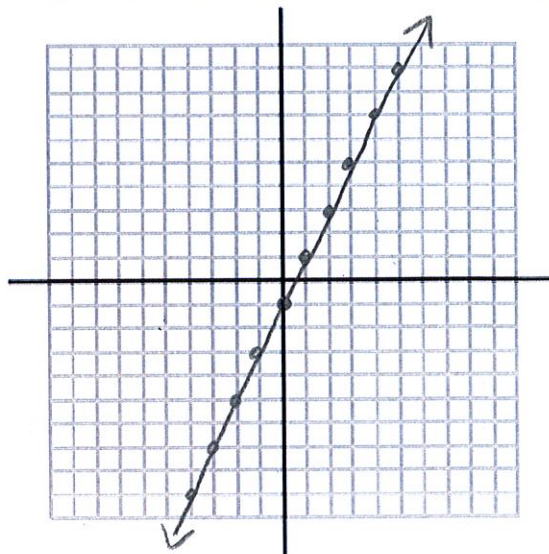
x	$-4x - 6$	$f(x)$
-3	$-4(-3) - 6$	6
0	$-4(0) - 6$	-6
1	$-4(1) - 6$	-10
4	$-4(4) - 6$	-22

Create a table of values and graph the function.

$$f(x) = 2x - 1$$

x	y
-1	-3
0	-1
1	1

$$\begin{aligned} 2(-1) &= -1 \\ 2(0) &= -1 \\ 2(1) &= 1 \end{aligned}$$



Situation. It costs \$50 to set up a booth at Eastern Market. Your booth's prices are \$15 per item.

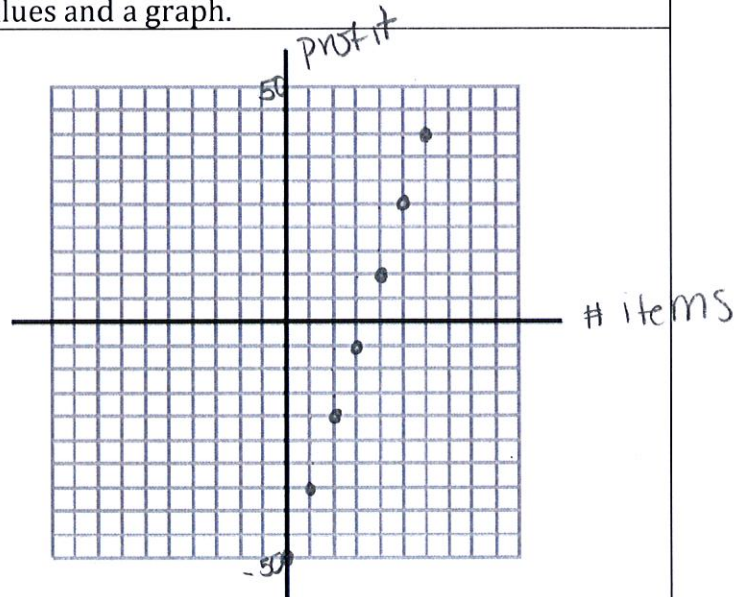
Write a function rule to describe this relationship.

Let X = # items Let y = total profit

Equation: $y = 15x - 50$

Model the function with a table of values and a graph.

X	y
1	-35
2	-20
3	-5
4	10



Find the constant of proportionality in each equation.

$$-2y = 2x$$

$$K = -1$$

$$y - 7x = 0$$

$$K = 7$$

Write an equation of the direct variation that includes the point $(-3, 9)$.

$$y = -3x$$

You can type ~~15~~ words in one minute. How long will it take you to type a paper that has to be 900 words?

x	y
-1	4
0	0
2	-8
3	-12

Direct Variation yes or no

Equation: $y = -4x$

Johnny's paycheck varies directly by the number of hours worked. If he works 15 hours, his pay is \$78.75. Find the pay for 35 hours of work.

$$\frac{15}{1} = \frac{900}{x}$$

60 minutes
1 hour

If y varies directly with x, when x = 3 and y = 9, find x when y = 18.

x	y	k
3	9	3
6	18	3

$$\begin{aligned} y &= kx \\ 9 &= 3x \\ \frac{9}{3} &= \frac{3x}{3} \\ 6 &= x \end{aligned}$$

If y varies inversely with x when x = 3 and y = 6, find y when x = 2.

x	y	k
3	6	18
2	9	18

$$\begin{aligned} y &= \frac{k}{x} \\ y &= \frac{18}{2} \\ y &= 9 \end{aligned}$$

Determine if each equation is direction variation, inverse variation, or neither.

$$y = 6x$$

DV

$$2y + 3 = 0$$

N

$$y = \frac{-3}{x}$$

IV

$$y = 2x - 9$$

N

Decide if each data set represents a *direct variation* or an *inverse variation*. Then, write an equation to model the data.

x	y	k
3	10	30
5	6	30
10	3	30

direct variation OR inverse variation

equation: $y = \frac{30}{x}$

x	y	k
2	4	2
4	8	2
6	-12	2

direct variation OR inverse variation

equation: $y = 2x$

Find the constant of variation k for the inverse variation.

$(12, 1)$

$$K = 12$$



$x = 3$ when $y = 7$

$$K = 21$$



Situation: Your new job is at the Custom T Shop, where T-shirts are printed to order. For each order, Custom T Shop charges \$8.00 per shirt plus a one time set up fee of \$15.00.

Write a function rule to describe this relationship.

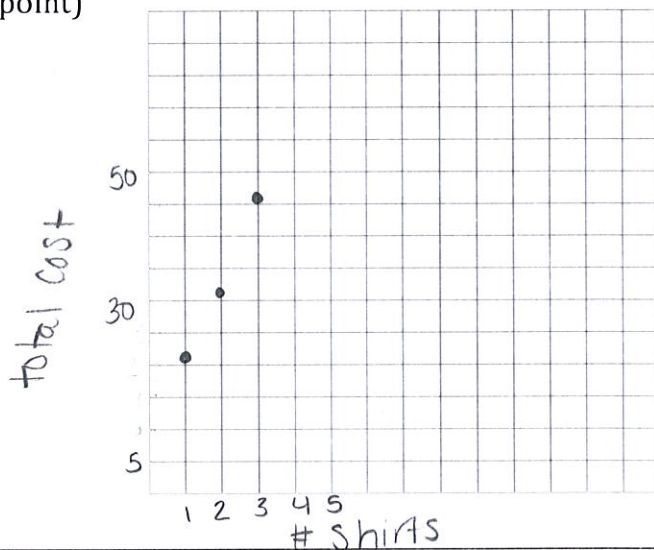
Let $x = \# \text{ of shirts}$ Let $y = \text{total cost}$

Equation: $y = 8x + 15$

Create a table of values. (1 point)

x	y
1	23
2	31
3	46 39

(1 point)



If you bought 8 t-shirts, how much will your final bill be?

$$y = 8(8) + 15$$

$$y = 64 + 15$$

$$y = 79$$

$$\boxed{\$79}$$

Your final bill was \$95, how many t-shirts did you buy?

$$95 = 8x + 15$$

$$80 = 8x$$

$$10 = x$$

$$\boxed{10 \text{ t-shirts}}$$